STATE OF CALIFORNIA
FISH AND GAME COMMISSION
FINAL STATEMENT OF REASONS FOR REGULATORY ACTION

Amend Sections 163 and 164
Title 14, California Code of Regulations
Re: Harvest of Herring and Harvest of Herring Eggs

I. Date of Initial Statement of Reasons: May 26, 2009

II. Date of Final Statement of Reasons: September 3, 2009

III. Dates and Locations of Scheduled Hearings:

(a) Notice Hearing: Date: June 25, 2009
Location: Woodland, CA

(b) Discussion Hearing: Date: August 6, 2009
Location: Woodland, CA

(c) Adoption Hearing: Date: September 3, 2009
Location: Woodland, CA

IV. Update:

A non-substantive modification was made to the originally proposed language of the Initial Statement of Reasons. Subsection (g)(4)(B) of Section 163, Title 14, CCR, inadvertently omitted the option for a quota of 0 tons.

The Commission adopted the California Department of Fish and Game (Department) recommended quota for San Francisco Bay of 0 tons, which represents a 0 percent harvest of the 2008-09 spawning biomass estimate as noted in the Initial Statement of Reasons. This also closes the herring roe and herring-eggs-on-kelp fishery in San Francisco Bay for the 2009-2010 season. Further, the Commission adopted the Department recommendation to close the open ocean fishery that takes place for herring, primarily in Monterey Bay beginning in 2010. In addition, the Commission adopted the Department recommended season dates for Tomales Bay and minor changes were made to correct the revision dates on Form 1377 and Form 1406 to reflect the current license year application.

V. Summary of Primary Considerations Raised in Opposition and in Support:

Santi Roberts (Oceana, California Project Manager) Letter dated June 25, 2009 (Attachment 1)

Comment 1

Oceana urges the Commission to adopt the Department's recommendations related to the commercial herring fishery by closing the San Francisco Bay 2009-10 fishery and the ocean fishery for the remainder of 2009 and all of 2010.

Response

Comment noted.

Comment 2

Oceana also requests that the Commission direct the Department to produce a comprehensive ecosystem-based Fishery Management Plan (FMP) for herring and other forage fish, centered on maintaining their functional role in the ecosystem through the use of an ecosystem sustainable yield approach.

Response

The Department is now in the initial stages of preparing a FMP for the Pacific herring fishery. As prescribed in the Marine Life Management Act (MLMA) the Department will address ecosystem and habitat issues, relevant to the Pacific herring fishery, in the Pacific herring FMP. Several other coastal pelagic species (CPS) commercially fished in California are managed under federal fishery management plans.

Comment 3

Oceana further recommends to the Commission that the herring fishery not be reopened until such a plan is in place.

Response

Based upon experience with previous FMP development, the Department anticipates that it will take 3 to 4 years from the onset of the process until an FMP is adopted by the Commission. The Department conducts annual assessments of the size of the spawning populations of herring (spawning biomass) in San Francisco Bay. In addition to the assessment of spawning biomass, the Department examines the age structure of the spawning population, growth and general condition, biological aspects of the catch, and environmental conditions. These data serve as the basis for establishing fishing quotas for the next season. The Department may recommend reopening the San Francisco Bay herring fishery before the FMP is completed if, along with favorable biological and environmental

conditions, the herring spawning population reaches a level that can sustain a fishery and Pacific herring's vital role as a forage fish.

Comment 4

Oceana states that continued fishing of Pacific herring at any level this year jeopardizes not only the herring population and the future viability of the herring fishery, but the many species of larger fish (including commercially and recreationally important species), and seabirds and mammals that prey on these fish. Thus, Oceana recommends that the Commission must take the strong actions above to begin the recovery of San Francisco Bay herring to sustainable levels and protect its critical role in the ecosystem.

Response

The Department recognizes that Pacific herring is a valuable commercial species that occupies a unique and important role in California's marine and estuary ecosystems. Given the low levels of the San Francisco Bay stock, the importance of protecting herring becomes vital to help ensure healthy ecosystem functioning. Due to the greatly depressed state of this stock the Department is recommending a precautionary approach be taken that ensures long-term sustainability of the fishery while safeguarding its importance as a forage species in a functioning ecosystem.

Comment 5

Oceana reiterates that management by crisis is not good for the fish or the ecosystem, the limit beyond which no fishing should take place has clearly been breached, and that the herring biomass threshold necessary to resume fishing is not clear.

Response

Please see response to Comment 3 above.

Comment 6

Oceana questions if it is the policy of the state to stop fishing only when the population has collapsed.

Response

Section 7050(b) of the California Fish and Game Code states the following: "It is the policy of the state to ensure the conservation,

sustainable use, and, where feasible, restoration of California's marine living resources for the benefit of all the citizens of the state."

Comment 7

Oceana states that management must move towards a resource-first, ecosystem-based approach complete with catch quotas based on Ecological Sustainable Yield as supported by MLMA, which requires that fisheries management move away from the traditional single-species management and take into account all elements of the ecosystem. Furthermore, the MLMA requires showing that fisheries and other activities are sustainable without waiting for evidence that damage is occurring before measures are taken. See Fish & Game Code Section 7050.2.

Response

Comment noted.

Comment 8

Oceana states that in 2008, visitors to San Francisco spent $8.52 billion, generating some $527 million in tax revenue for the state and that risking the health of the ecosystem for a fishery that brought in an average of around $1.2 million from 2000-2007 is clearly not in the best interests of the people of California.

Response

Comment noted.

Comment 9

As the responsibility for the health of the state's wildlife has been entrusted to the Commission and Department by all Californians, fishing for herring should not resume until a comprehensive ecosystem-based management regime is in place that ensures the maintenance of their functional role in the ecosystem. This is best addressed through a comprehensive FMP. Indeed, the MLMA requires FMPs for all state marine fisheries. See Fish & Game Code Sections 7070 and 7072.6.

Response

Please see response to Comment 3 above.

Comment 10

The need for ecosystem-based management of all forage fisheries in the state of California is paramount given a burgeoning population and the effects of climate change and ocean acidification.

Response

Comment noted.

Comment 11

Oceana states that when the state legislature passed the MLMA in 1999 they recognized the importance of the California Current ecosystem to the nation's economic and cultural activities, such as recreation, fishing, shipping, and tourism. Such activities are dependent on a healthy food web, the foundation of which is dominated by a few species that are vitally important as prey for much of the rest of the ecosystem. Herring is one of these species; others in the waters off California include sardines, anchovies, mackerel, market squid, krill, and smelts.

Response

Comment noted.

In addition to Oceana's specific suggestions for herring mentioned above, they provided more general recommendations for all current and potential forage fisheries managed by California in Comments 12 through 15.

Comment 12

Ensure forage fisheries are managed for the long-term health of the ecosystem, ensuring enough are left for larger fish, sea birds, marine mammals, and other sea life.

Response

Comment noted.

Comment 13

Prevent the development of new forage fisheries unless and until research shows sustainable fishing can happen without jeopardizing the ecosystem.

Response

Comment noted.

Comment 14

Prioritize the vital ecosystem roles of forage species over their use as feed for industrial fish farms.

Response

Comment noted.

Comment 15

Ensure forage fishing does not impact prey availability for predators during critical breeding and rearing life stages.

Response

Comment noted.

Comment 16

Oceana states that they are looking forward to working with the Commission further, to assist the Department of Fish and Game as it develops a comprehensive FMP for herring and other forage species and moves California's forage fisheries towards an ecosystem-based management approach.

Response

The Department recognizes that developing a successful FMP is a collaborative process requiring ongoing communication and participation with interested parties, thus the Department welcomes and appreciates the involvement of Oceana and others in the Pacific herring FMP preparation process.

Santi Roberts (Oceana, California Project Manager), in oral comment at the June 25, 2009, Commission Meeting

Comment 1

Mr. Roberts stated that Oceana recommends that the Commission adopt the Department’s proposal to establish a zero ton quota for the San Francisco Bay fishery.

Response

Comment noted.

Comment 2

Mr. Roberts noted the importance of Pacific herring's ecological role in the estuary as a forage species.

Response

The Department recognizes the unique role Pacific herring have in California's marine ecosystems as an important forage species during each life history stage from egg to adult.

Comment 3

Mr. Roberts stated that "management by crisis" is not good for the fish, fishermen or the ecosystem and there is a need for a minimum threshold biomass needed to allow fishing.

Response

Comment noted.

Nick Sohrakoff (Directors Herring Advisory Committee Co-Chairman), in oral comment at the June 25, 2009, Commission Meeting

Comment 1

Mr, Sohrakoff stated that although the Director's Herring Advisor Committee (DHAC) originally recommended to the Department a seven percent harvest rate for next season in San Francisco Bay, a majority of DHAC members now support the Department's zero percent harvest rate proposal.

Response

Comment noted.

Comment 2

Mr, Sohrakoff stated that there are concerns over a permanent fishing closure and that the buyers are concerned about losing market share.

Response

The Department will recommend reopening the San Francisco Bay herring fishery if, along with favorable biological and environmental conditions, the herring spawning population reaches a level that can sustain a fishery and Pacific herring's vital role as a forage fish.

Comment 3

Mr. Sohrakoff also stated that the fishermen are "eyes on the water" and are looking into continuing to help the Department biologists spot herring schools and spawning events.

Response

The Department greatly appreciates the assistance locating herring schools and spawn events herring fishermen have given to the Department during past seasons and would welcome any future assistance the fishermen are able to provide.

Ernie Koepf in oral comment at the August 6, 2009, Commission Meeting

Comment 1

Mr. Koepf stated that three San Francisco Bay herring seasons have had lower biomass estimates than the 2008-09 season estimate of 4,800 tons; 1972-73, 1977-78, and 1997-98 with 4,200, 3,700, and 3,500 tons, respectively.

Response

The Department began sampling both intertidal and subtidal spawns during the 1978-79 season, thus data from spawn deposition surveys prior to that period, when only intertidal spawns were sampled, are not included in Department data summaries. The official Department spawning biomass estimate (spawn deposition and hydroacoustic survey data combined) for 1997-98 San Francisco Bay herring season is 20,000 tons.

Comment 2

Mr. Koepf stated that the San Francisco herring fishery is now a small scale fishery with effort at 20 percent of historic levels and that active permits have reduced from 350 to 134.

Response

The Department agrees that effort has decreased for this fishery in recent years. During the 1990s, the number of herring permits peaked at over 450 with over 120 vessels participating. In contrast, during the 2008-09 season, permit renewals fell to 210 and only 30 vessels elected to participate.

Comment 3

Mr. Koepf stated that the smaller fishery of today is better than it was in the past.

Response

Comment noted.

Comment 4

Mr. Koepf stated that there is no possibility for the San Francisco herring permittees to overharvest herring.

Response

The Department considers that due to the depressed state of the San Francisco stock, a precautionary approach needs to be taken to ensure long-term sustainability of the fishery while safeguarding its importance as a forage species in a functioning ecosystem. A zero harvest of herring would prohibit the take of herring, protect the San Francisco stock from fishing mortality, and conserve more herring for stock rebuilding.

Comment 5

Mr. Koepf stated that this fishery has never exceeded its harvest ratio. Catch has been far below the 20 percent designated by the Pacific herring model.

Response

The 2003 peer review of the Department's commercial Pacific herring fishery management practices found that the Department may have been overestimating the annual herring spawning population estimate by using the higher value of the spawn survey or the hydroacoustic survey as the basis for setting quotas. This method of setting quotas may have contributed to overfishing and an exploitation rate higher than optimal level of 20 percent between the 1992-93 and 2001-02 seasons.

Comment 6

Mr. Koepf stated that the herring fishery has never been closed and given the economic recession, the State of California must do everything possible to maintain employment.

Response

The Department understands the economic challenges facing those in the herring industry. However, the Department also believes it imperative that the resource be managed to achieve long-term sustainability.

Comment 7

Mr. Koepf provided the following information regarding commercial catch in San Francisco Bay. Historically, the commercial fishery catches zero percent of the most abundant 2 year old herring and 3.5 percent of the second most abundant 3 year olds, which together make up approximately 78 percent of the population. The gill net fleet harvests age 4 and 5 year old fish which make up 22 percent of the annual population, leaving 78 percent for conservation purposes.

Response

The Department agrees that the commercial fishery does have a low exploitation rate. However, given the extraordinary decline in spawning biomass (for all age classes) during the three previous seasons the Department believes a zero quota option appropriate to safeguard the remaining population. Any additional fishing related mortality will delay stock rebuilding and jeopardize the future of the resource.

Comment 8

Mr. Koepf noted that in previous years low biomass estimates are often followed by high estimates. He then provided an example of a low biomass season for 2004-05, followed by a record high biomass for the 2005-06 season.

Response

Comment noted.

Comment 9

Mr. Koepf noted that the Department's spawning biomass estimates are conservative in nature and this should be taken into account when setting

quotas for this fishery. He continued by saying it would be a mistake to close the fishery without taking into account all factors.

Response

The 2003 independent peer review of the Department's spawning biomass estimation methodology found that the hydroacoustic method tended to overestimate the spawning biomass, and the spawning ground survey was a better estimator of spawning biomass. The Department does weigh several factors when making management decisions. These include population age structure, ocean conditions, young-of- the-year data, and herring's importance as a forage species. Given these factors and the dramatic decline in spawning biomass the Department believes a zero quota option is appropriate to safeguard the remaining population.

Santi Roberts (Oceana, California Project Manager), in oral comment at the August 6, 2009, Commission Meeting

Comment 1

Mr. Roberts stated that Oceana recommends that the Commission adopt the Department's proposal to establish a zero ton quota for the San Francisco Bay fishery.

Response

Comment noted.

Comment 2

Oceana further recommends to the Commission that the herring fishery not be reopened until a Fishery Management Plan (FMP) for herring is in place.

Response

The Department may recommend reopening the San Francisco Bay herring fishery before the FMP is completed if, along with favorable biological and environmental conditions, the herring spawning population reaches a level that can sustain a fishery and Pacific herring's vital role as a forage fish.

Comment 3

Mr. Roberts asks that the Department include ecosystem considerations in the herring FMP and ensure that enough forage species are available to

fulfill role in ecosystem. Ocean would like to see an ecosystem model approach such as the model used for the Prince William Sound herring fishery.

Response

The Department is now in the initial stages of preparing a FMP for the Pacific herring fishery. As prescribed in the Marine Life Management Act (MLMA) the Department will address ecosystem and habitat issues, relevant to the Pacific herring fishery, in the Pacific herring FMP. Also, the Department recognizes that Pacific herring is a valuable commercial species that occupies a unique and important role in California's marine and estuary ecosystems. Given the low levels of the San Francisco Bay stock, the importance of protecting herring becomes vital to help ensure healthy ecosystem functioning.

Chris Lonero, in oral comment at the August 6, 2009, Commission Meeting

Comment 1

Mr. Lonero questioned the Department's methodology for collecting data, specifically the use of spawning biomass data rather than hydroacoustic data. He believes the data must be flawed, given what he perceived as huge fluctuation of spawning biomass estimates from season to season. Mr. Lonero also expressed doubt that the Department has sufficient data to manage this resource.

Response

The 2003 independent peer review of the Department's spawning biomass estimation methodology found that the hydroacoustic method tended to overestimate the spawning biomass, and the spawn deposition survey was a better estimator of spawning biomass. The Department discontinued the hydroacoustic survey as a secondary biomass estimation technique. Coastal pelagic species such as herring are comprised of comparatively few year classes, the strength of which may vary greatly from year to year. Consequently, annual abundance may be expected to change from year to year due in part to the strength of each new incoming year class.

Comment 2

Mr. Lonero expressed concern that the Department does not have adequate resources to conduct spawning ground surveys in San Francisco Bay particularly given the large area of San Francisco Bay. He

continued by questioning what affect the Governor directed furloughs and State budget crisis will have on herring surveys.

Response

The Department conducts spawn surveys at minimum two times per week from November through April each season. The Department also utilizes "reports from the herring hotline" as personal communication with fishermen for assistance with locating spawning events. Based on historical data, the Department has developed a search protocol for detecting spawn locations inside San Francisco Bay. The ongoing budget crisis and the three-day per month furlough program will reduce the time available for field and laboratory work associated with herring fishery monitoring and assessment. However, Department biologists will still be conducting herring spawn deposition surveys and collecting biological data on the San Francisco Bay herring population during the 2009-10 season. The shortened work schedule may reduce the amount of scientific data collected during population and biological surveys depending on the timing of spawn events and the location of herring schools in the bay.

Comment 3

Mr. Lonero stated that the Department website mentions herring spawn in "deep water," on boat bottoms and eelgrass, not only along rocky shoreline. He believes the Department must use divers to locate and access spawn events.

Response

The Department believes the current methodology for collecting spawn samples is appropriate for conditions in San Francisco Bay and the Department's spawning deposition survey methods are comparable to methods used by resource management agencies in Alaska and British Columbia. Pacific herring are known to spawn on all types of substrate (except mud) in intertidal and shallow subtidal areas of San Francisco Bay. During the herring spawning season (November-April), Department biologists systematically survey shoreline areas throughout the bay looking for signs of herring spawning activity. The Department utilizes a variety of methods to locate spawn events and estimate spawning biomass. At this time deep water spawn events remain unsubstantiated and diving in San Francisco Bay is inherently dangerous and cost-prohibitive.

Comment 4

Mr. Lonero requested that the Commission adopt “Option 2” and help foster a cooperative relationship between the Department and the herring industry. He believes this cooperation will lead to better and more equitable decisions.

Response

The Department values its cooperative relationship with the herring industry. Based on the best available science and to safeguard the herring population, the Department believes it appropriate to recommend a zero harvest for consideration by the Commission.

Hugh Yamazaki (President, Sea K California Fish Ltd.) Letter dated August 18, 2009 (Attachment 2)

Comment 1

Mr. Yamazaki states that Sea K California Fish Ltd. is one of the limited buyers participating in the San Francisco Bay herring fishery.

Response

Comment noted.

Comment 2

Mr. Yamazaki states that while we understand the Department’s concerns over recent biomass assessment, we appeal to the Commission to grant the traditional quota based on 10 percent of the biomass, rather than take extreme measures by imposing a zero quota for the 2009-10 season.

Response

The Department considers that due to the depressed state of the San Francisco stock, a precautionary approach needs to be taken to ensure long-term sustainability of the fishery while safeguarding its importance as a forage species in a functioning ecosystem. A zero harvest of herring would prohibit the take of herring, protect the San Francisco stock from fishing mortality, and conserve more herring for stock rebuilding.

Comment 3

Mr. Yamazaki states that the current biomass assessment methodology ensures a conservative outlook on stock assessments, which acts as a safety net. Thus, a 10 percent biomass quota is reasonable.

Response

Please see response to Comment 2 above.

Comment 4

Mr. Yamazaki states that the Commission has not implemented any quota changes for other areas such as Tomales Bay, which has had no biomass assessment and zero landings during the 2008-09 season. Mr. Yamazaki further states that the Commission granted a 350 ton quota for the 2009-10 herring season in Tomales Bay without any debate, thus the Commission clearly has some confidence that a mere 350 ton quota in the non-assessed Tomales Bay will have minimal adverse impact. Mr. Yamazaki states the same reasoning should be extended to the vast San Francisco Bay.

Response

Commercial fisheries for roe herring exist in four geographically distinct areas in California; San Francisco Bay, Tomales Bay, Humboldt Bay and the Crescent City area. The Department manages commercial herring fishing under the assumption that each spawning population is a separate stock. The Commission established a set quota of 350 tons for the Tomales Bay herring fishery beginning with the 2006-07 season. The shift to a fixed set quota for Tomales Bay was to allow the Department to manage the herring fishery in a more cost-effective way similar to the Humboldt Bay and Crescent City Harbor herring fisheries. Managing the Tomales Bay fishery on a real-time basis is no longer feasible due to costs. The Department based this conservative fixed catch quota upon data collected over 34 seasons of managing the Tomales Bay herring fishery. If data becomes available that show the Tomales Bay spawning population has fallen significantly below historical averages, the Department would recommend to the Commission a zero quota for that fishery as was done for the San Francisco herring fishery.

Comment 5

Mr. Yamazaki stated that a zero quota for San Francisco Bay will jeopardize the livelihood of the fishermen, and the repercussions will extend to the long chain of California businesses that include; truck

drivers, unloading facilities, facilities for freezing and storage, packaging suppliers, equipment rentals, shipping companies and a stream of other small businesses struggling to survive amidst the current economic challenges.

Response

The Department understands the economic challenges facing those in the herring industry. However, the Department also believes it imperative that the resource be managed to achieve long-term sustainability.

Comment 6

Mr. Yamazaki states that the Commission's determination of adverse economic impact was understated when compared to potentially an excess of $1 million that a 10 percent biomass quota could bring to small California businesses who rely on this fishery during the winter months.

Response

The Department's analysis of the adverse economic impacts that might result from the proposed regulatory action is based on the best, and most current, economic data available on the San Francisco Bay herring fishery and takes into account industry multiplier effects of herring landings on all California businesses. However, this effect does not take into account any transactions that occur after the harvest is processed by the processors and exported to markets outside the State. Since the Department is unable to report on transactions occurring outside the jurisdiction of the State, for which it has no information, the analysis of adverse economic impacts is limited to the economic impact of the harvest in the proposed regulation, as would be reported by the industry on the commercial fishing landings receipts.

Comment 7

Mr. Yamazaki states that although the SFO herring fishery is not a large fishery in comparison to other global catches, a boutique market has been established for this product. Mr. Yamazaki adds that in developing this special market, we have been able to increase the fishermen's landing price by 40 percent from 2006-07 season to 2008-09 season.

Response

Comment Noted

Comment 8

Mr. Yamazaki states that the past three years of catch has revitalized interest in the San Francisco herring roe which is closely monitored by the Japanese market and that a zero quota will remove this market interest and virtually take San Francisco herring roe off the map. Mr. Yamazaki states that reinstating the quota the following year, after a one year absence of the product from a zero quota, will still negatively affect the strides the product has enjoyed in recent years.

Response

Comment Noted

Comment 9

Mr. Yamazaki states that a core group of fishermen are committed to the fishery and that Sea K California Fish Ltd., as a buyer, is committed to support this product. Additionally, Mr. Yamazaki requests that the Commission support this industry by granting Option 2 with a 10 percent (harvest rate) which results in a quota of 484 tons.

Response

Please see response to Comment 2 above.

Joe Garafalo Letter dated August 18, 2009 (Attachment 3)

Comment 1

Mr. Garafalo requests that the Commission consider Option 2 for the San Francisco Bay herring fishery's 2009-10 season.

Response

The Department considers that due to the depressed state of the San Francisco stock, a precautionary approach needs to be taken to ensure long-term sustainability of the fishery while safeguarding its importance as a forage species in a functioning ecosystem. A zero harvest of herring (Option 1) would prohibit the take of herring, protect the San Francisco stock from fishing mortality, and conserve more herring for stock rebuilding.

Comment 2

Mr. Garafalo states that he operates an unloading facility at Fisherman's wharf and relies heavily on herring landings for the winter months and that the zero quota in Option 1 would mean a loss of much needed work for himself, his staff, and other secondary businesses.

Response

The Department understands the economic challenges facing those in the herring industry. However, the Department also believes it imperative that the resource be managed to achieve long-term sustainability.

Comment 3

Mr. Garafalo states that he has been involved in the herring fishery for 20 years and that the herring fishery is cyclical so a low biomass based on current assessment methods is certainly not cause for alarm or drastic measures as a zero quota.

Response

The spawning biomass estimate for the 2008-2009 season was 4,844 tons, well below the historical average (1978-1979 season to present) of 49,428 tons. The estimate was a 57 percent decrease from the 2007-2008 season estimate of 11,183 tons. The Department recommends Option 1 due to the unprecedented low spawning biomass levels in the San Francisco stock for three consecutive seasons, with the 2008-09 season at a historic low.

Comment 4

Mr. Garafalo asks the Commission to please not use a low biomass to justify a closure and that a low biomass should result in a low quota based on a 10 percent harvest factor.

Response

Please see response to Comment 1 above.

Comment 5

Mr. Garafalo states that the 10 percent harvest factor reflects a fluctuating biomass proportionally and a 484 ton quota would remain in the realms of conservation while providing opportunity to those of us who rely on this fishery for our lively hoods.

Response

Please see response to Comment 3 above.

Paul Weakland in oral comment at the September 3, 2009, Commission Meeting

Comment 1

Mr. Weakland reiterated his criticisms of the Commission as well as the Department in regards to resource management and protection.

Response

Comment Noted

VI. Location and Index of Rulemaking File:

A rulemaking file with attached file index is maintained at:

California Fish and Game Commission
1416 Ninth Street
Sacramento, California 95814

VII. Location of Department Files:

Department of Fish and Game
1416 Ninth Street
Sacramento, California 95814

VIII. Description of Reasonable Alternatives to Regulatory Action:

(a) Alternatives to Regulatory Action: No alternatives were identified.

(b) No Change Alternative: A no change alternative would provide a quota for the 2009-10 fishing season of 1,118 tons.

(c) Consideration of Alternatives: In view of information currently possessed, no reasonable alternative considered would be more effective in carrying out the purposes for which the regulation is proposed or would be as effective and less burdensome to the affected private persons than the proposed regulation.

IX. Impact of Regulatory Action

The potential for significant statewide adverse economic impacts that might result from the proposed regulatory action has been assessed, and the following determinations relative to the required statutory categories have been made:

(a) Significant Statewide Adverse Economic Impact Directly Affecting Businesses, Including the Ability of California Businesses to Compete with Businesses in Other States:

Japan remains the major market for California herring roe (Kazunoko), which is processed for consumption in Japan as a traditional salted roe product or flavored roe product. Very recent gains in the Japanese Yen against the US dollar could provide for future increase in demand for herring roe. Nonetheless overall trends in ex-vessel prices continue to decline. Market observers attribute this decline to changing tastes, preferences, and demographics in Japan over the years.

The California commercial herring fishery takes place in four areas; San Francisco Bay, Tomales Bay, Humboldt Bay, and Crescent City Harbor. However, the greatest economic activity is derived from herring ventures in San Francisco Bay, which typically generate about 90 percent of the total average annual value for this California fishery. In real dollars, San Francisco Bay herring landings have averaged about $2.7 million in ex-vessel value to the fishermen since 2004. All the herring fishermen and herring processing plants are small businesses as defined under Government Code Section 11342.610.

In the 2008-2009 commercial herring season, San Francisco Bay landings amounted to 507 tons total, out of an available 1,118 ton quota. Depending on which option the Commission chooses for 2009-2010, the quota will be between 0 and 484 tons (10 percent of the 2008-2009 spawning estimate of 4,844 tons). Given this range relative to last season, the potential direct impacts are $20,900 to $479,000 in lost revenue to the fishermen. The resulting total output impact to the State's economy from this potentially lost revenue is $37,000 to $850,000. This is based on an economic output multiplier of 1.774 for calculating total direct, indirect, and induced impacts to California's economy from the herring fishery.

(b) Impact on the Creation or Elimination of Jobs Within the State, the Creation of New Businesses or the Elimination of Existing Businesses, or the Expansion of Businesses in California:

Given a range of $20,900 to $479,000 in potential lost revenue to the fishermen, the employment impacts are estimated to be between five to 105 jobs lost. This is based on an employment multiplier of 218.3 jobs per million dollars in lost fishing revenue in the California herring fishery.

(c) Cost Impacts on a Representative Private Person or Business:

The agency is not aware of any cost impacts that a representative private person or business would necessarily incur in reasonable compliance with the proposed action. There are no new fees or reporting requirements stipulated under the proposed regulations.

(d) Costs or Savings to State Agencies or Costs/Savings in Federal Funding to the State:

None.

(e) Nondiscretionary Costs/Savings to Local Agencies:

None.

(f) Programs mandated on Local Agencies or School Districts:

None.

(g) Costs Imposed on Any Local Agency or School District that is Required to be Reimbursed Under Part 7 (commencing with Section 17500) of Division 4:

None.

(h) Effect on Housing Costs:

None.

UPDATED INFORMATIVE DIGEST\POLICY STATEMENT OVERVIEW

Under existing law, herring may be taken for commercial purposes only under a revocable permit, subject to such regulations as the Fish and Game Commission shall prescribe. Current regulations specify: permittee qualifications; permit application procedures and requirements; permit limitations; permit areas; vessel identification requirements; fishing quotas; seasons; gear restrictions; quotas; and landing and monitoring requirements.

The proposed regulations would establish the fishing quota, season dates and times for fishing operations for the 2009-2010 season in San Francisco Bay based on the most recent biomass assessments of spawning populations of herring as well as season dates and times for fishing operations for the 2009-2010 season in Tomales Bay. There are no quota changes proposed for Crescent City Harbor, Humboldt or Tomales bays for the 2009-10 herring season.

The following is a summary of the proposed changes in Sections 163, and 164, Title 14, CCR:

Option 1

- The Department recommended proposed regulations would set the San Francisco Bay quota at 0 tons, which represents a 0 percent harvest of the 2008-09 spawning biomass estimate. If the Commission were to adopt this option, this would close the herring roe and herring-eggs-on-kelp fishery in San Francisco Bay for the 2009-2010 season.

- The Department recommended proposed regulations would close the open ocean fishery that takes place for herring, primarily in Monterey Bay. An incidental allowance of no more than 10 percent herring by weight of any load composed primarily of other coastal pelagic fish species or market squid may be landed.

- The Department recommended proposed regulations would set the dates of the roe herring fishery in Tomales Bay from noon on Sunday, December 27, 2009, until noon on Friday, February 26, 2010.

Option 2

- The alternative proposed regulations would allow a quota within the range of 0 to 10 percent of the 2008-2009 spawning biomass estimate of 4,844 tons.

- The alternative proposed regulations would allow a harvest rate of seven percent of the 2008-2009 spawning biomass.

- The alternative proposed regulations would create one San Francisco Bay herring season with a common quota for all platoons for the 2009-2010 season.

- The alternative proposed regulations would modify San Francisco Bay herring permit requirements only for the 2009-2010 season, by requiring two permits of any type (DH, Odd, or Even) for an individual to fish one net (minimum allowed per vessel), and four permits of any type (DH, Odd, or Even) for an individual to fish two nets (maximum allowed per vessel).

- Alternative proposed regulations would allow fishing in San Francisco Bay from 5:00 p.m. on Sunday, January 3, 2010, until noon on Friday, February 26, 2010.

The Commission adopted the Department recommended proposed regulations in Option 1 for the 2009-10 commercial herring season.

The following are minor editorial changes proposed to improve clarity and consistency of the regulations:

- The proposed regulations would correct the Limited Entry Pacific Herring permit application number in subsection 163(b)(1) and the Herring Eggs on Kelp permit application number in subsection 164(h)(1) to coincide with the 2009-2010 season applications.

The Commission approved of minor amendments to clarify and simplify the regulations.

(Attachment 1)

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June 25, 2009

President Cindy Gustafson
California Fish and Game Commission
1416 Ninth Street
Sacramento, CA 95814

RE: Herring Fishery Management

Dear President Gustafson and Commissioners:

We appreciate the opportunity to provide comments on the San Francisco herring fishery and fisheries for forage species more generally. We urge you to adopt the California Department of Fish and Game's (DFG) recommendations related to the commercial herring fishery by closing the San Francisco Bay 2009/2010 fishery and the ocean fishery for the remainder of 2009 and all of 2010. 1 We also request that the Commission direct the Department to produce a comprehensive ecosystem-based Fishery Management Plan (FMP) for herring and other forage fish, centered on maintaining their functional role in the ecosystem through the use of an ecosystem sustainable yield approach. 2 We further recommend the fishery not be reopened until such a plan is in place. 3

As you know, the Department's 2009 Draft Supplemental Environmental Document on Pacific Herring Commercial Fishing Regulations (SED) paints a very clear picture of the poor health of the San Francisco Bay herring population:

- Third consecutive year of unprecedented low levels of spawning biomass, with 2009 being the lowest ever recorded (less than 10% of the historic average);
- Significant declines in the estimated numbers of older herring in the spawning stock, including record lows of age 3-5 herring;
- Poor recruitment in age 3-5 herring, which may continue to delay stock rebuilding;
- Returning biomass has been unusually dependent on very few spawning events;
- Individual female herring are in poor condition, indicating possible poor growth, survival and reproductive potential; and
- Coastwide trend in decreasing mean length at age and truncation in age classes since the 1997-1998 El Nino.

It is equally clear that continued fishing at any level this year jeopardizes not only the herring population and the future viability of the herring fishery, but the many species of larger fish (including commercially and recreationally important species), seabirds and mammals that prey on these fish. Thus, the Commission must take the strong actions above to begin the recovery of San Francisco Bay herring to sustainable levels and protect its critical role in the ecosystem. 4

President Cindy Gustafson
San Francisco Bay Herring – Forage Fisheries
June 25 2009

Management by crisis is not good for the fish, the ecosystem, or the fishery. Although the limit beyond which no fishing should take place has clearly been breached, the herring biomass threshold that needs to be reached to resume fishing is not clear. This question has been brought to the Department's and Commission's attention in previous years through the scoping process for this fishery,[1] but remains unanswered. Is it then the policy of the State to stop fishing only when the population has collapsed? If not, then management must move towards a resource-first, ecosystem-based approach complete with catch quotas based on Ecological Sustainable Yield. Such an approach is supported by the MLMA, which requires that fisheries management move away from the traditional single-species management paradigm toward a holistic approach that takes into account all elements of the ecosystem. Furthermore, the MLMA requires showing that fisheries and other activities are sustainable without waiting for evidence that damage is occurring before measures are taken. *See* Cal Fish & Game Code § 7050.[2]

The importance of ensuring the viable ecological function of herring in the San Francisco Bay ecosystem is uncontested. As one of relatively few mid-level forage species, they play an important role linking primary production to the higher trophic levels in the food web, including larger commercially and recreationally important fish, marine mammals and seabirds. As documented in the Department's 2009 SED during the winter spawning season, Pacific herring eggs are consumed by at least 20 species of birds, invertebrates, perch and salmon, while juvenile herring support a wide range of Bay species during the rest of the year.[3] Once they have left the bay, herring are consumed by Chinook and coho salmon, rockfish, sharks and many other species of larger fish, in addition to harbor seals, California sea lions, porpoises, dolphins, and whales. The ED concludes that due "to the greatly depressed state of this stock a precautionary approach should be taken that ensures long term sustainability of the fishery while safeguarding its importance as a forage species in a functioning ecosystem."[2]

Equally uncontested is the importance of the Bay ecosystem to the thriving tourism industry in the Bay area, which draws visitors from all over the world. In 2008, visitors to San Francisco spent $8.52 billion, generating some $527 million in tax revenue for the state.[4] Risking the health of the ecosystem for a fishery that brought in an average of around $1.2 million from 2000-2007[5] is clearly not in the best interests of the people of California. As the responsibility for the health of the state's wildlife has been entrusted to the Commission and Department by all Californians, fishing for herring should not resume until a comprehensive ecosystem-based management regime is in place that ensures the maintenance of their functional role in the

[1] Mentioned in eg the final Supplemental Environmental Documents from 2005 through 2009 in Section 1.3.
[2] The MLMA's overriding goal is "to ensure the conservation, sustainable use, and, where feasible, restoration of California's marine living resources." Cal. Fish & Game Code § 7050(b). This includes conserving "the health and diversity of marine ecosystems and marine living resources" and only authorizing "those activities and uses of marine living resources that are sustainable." *Id.* at (b)(1), (2). *See also* California Department of Fish and Game Interpretation, http://www.dfg.ca.gov/marine/mlma/index.asp#fisheries, June 19, 2009
[3] DFG 2009. Draft Supplemental Environmental Document. Pacific Herring Commercial Fishing Regulations. Undated. pp.3-14 and 3-15
[4] San Francisco Chronicle, May 12 2009. San Francisco Tourism Revenue Increased Slightly Despite Recession. Accessed at http://www.sanfranciscosentinel.com/?p=26406 on June 22 2009.
[5] CDFG California Marine Fisheries Commercial Landings Data Table 15 for 2000-2007, available at http://www.dfg.ca.gov/marine/fishing.asp#Commercial. Accessed June 22 2009.

ecosystem. This is best addressed through a comprehensive FMP. Indeed, the MLMA requires FMPs for all state marine fisheries. *See* Cal. Fish & Game Code §§ 7070, 7072.[6] 9 cont.

The need for ecosystem-based management of all forage fisheries in the state of California is paramount given a burgeoning population and the effects of climate change and ocean acidification. 10 In passing the MLMA in 1999, the Legislature clearly recognized the importance of the California Current ecosystem to the economy, culture, and well-being of the West Coast states as well as the American way of life, by providing opportunities to millions of Americans for recreational activities, commercial fishing, critical commerce supply links, subsistence and personal use, and a variety of economic activities including tourism. Such activities are dependent on a healthy food web, the foundation of which is dominated by a few species that are vitally important as prey for much of the rest of the ecosystem. Herring is one of these species; others in the waters off California include sardines, anchovies, mackerel, market squid, krill, and smelts. 11 In addition to the specific suggestions related to herring above, we provide these more general recommendations on all current and potential future forage fisheries managed by California:

1. Ensure forage fisheries are managed for the long-term health of the ecosystem, ensuring enough are left for larger fish, sea birds, marine mammals, and other sea life; 12
2. Prevent the development of new forage fisheries unless and until research shows sustainable fishing can happen without jeopardizing the ecosystem; 13
3. Prioritize the vital ecosystem roles of forage species over their use as feed for industrial fish farms; and 14
4. Ensure forage fishing does not impact prey availability for predators during critical breeding and rearing life stages. 15

In summary, the State of California must not use population collapse as the fishery control for restricting fishing. The goal of management as it relates to forage species in California should be the maintenance of vigorous populations to assure the long-term viability, resilience, biodiversity and general health of California's ocean and coastal ecosystems and the communities that depend upon them. We look forward to working with you further, to assist the Department of Fish and Game as it develops a comprehensive FMP for herring and other forage species and moves California's forage fisheries towards an ecosystem-based management approach. 16

Sincerely,

Santi Roberts
California Project Manager

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[6] Cal Fish & Game Code § 7072 "Fishery management plans shall form the primary basis for managing California's sport and commercial marine fisheries." *See also Id.* at § 7070 "The Legislature finds and declares that the critical need to conserve, utilize, and manage the state's marine fish resources and to meet the policies and other requirements stated in this part require that the state's fisheries be managed by means of fishery management plans."

(Attachment 2)

Sea K California Fish Ltd.
2269 Chestnut Street #980
San Francisco, California USA 94123
Tel: 1-604-270-1651 Fax: 1-604-270-6217

August 18, 2009

Fish and Game Commission
State of California
Via Facsimile: (916) 653-5040

Re: Sections 163 and 164, Title 14, California Code of Regulations - Notice of Proposed Changes in Regulations - 2009/10 San Francisco Bay Commercial Herring Fishery

Dear Commissioners,

We are one of the limited buyers participating in the San Francisco Bay herring fishery. While we understand the Department's concerns over recent biomass assessment, we appeal to the Commission to grant the traditional quota based on 10% of the biomass, rather than to take extreme measures by imposing a zero quota for the 2009/10 season. The current biomass assessment methodology ensures a conservative outlook on stock assessments and given this safety net, a 10% biomass quota is reasonable. 1 2 3

The Commission has not implemented any quota changes for other areas such as Tomales Bay. With no biomass assessment and zero landings in 2008/09 in Tomales Bay, the Commission has granted a 350 ton quota for the 2009/10 season without any debate. Clearly, the Commission has some confidence that a mere 350 ton quota in the non-assessed Tomales Bay will have minimal adverse impact. The same reasoning should be extended to the vast San Francisco Bay. 4

A zero quota in San Francisco Bay will jeopardize the livelihood of the fishermen, and the repercussions will extend to the long chain of California businesses who rely on the fishery. Our product remains in the state of California from unloading to processing. We utilize a local unloading facility at Fisherman's wharf and enlist local truck drivers to transport the product to California facilities for freezing and storage. Along this chain of businesses are packaging suppliers, equipment rentals, shipping companies and a stream of other small businesses struggling to survive amidst the current economic challenges. 5

The Commission's determination of adverse economic impact was understated in comparison to potentially an excess of $1 million that a 10% biomass quota could bring to small California businesses who rely on this fishery during the winter months. 6

While the SFO herring fishery is not a large fishery in comparison to other global catches, a boutique market has been established for this product. In developing this special market, we have been able to increase the fishermen's landing price by 40% from 2006/07 to 2008/09. 7

The past three years of catch has revitalized interest in the San Francisco herring roe which is closely monitored by the Japanese market. A zero quota will remove this market interest and virtually take San Francisco herring roe off the map. Even if a quota is reinstated the following year, a one year absence of the product from a zero quota will affect the strides the product has enjoyed in recent years. A one year absence will also bode uncertainty to many California businesses associated with the fishery. Already with rumors abound about the possible closure for 2009/10, Japanese buyers have started to consider alternate replacement sources. 8

A core group of fishermen are committed to the fishery and we as a buyer are committed to support this product. We ask that the Commission support this industry by granting Option 2 with a 10% biomass quota of 484 tons. 9
Thank you.

Yours truly,

Hugh Yamazaki,
President
Sea K California Fish Ltd.

TOTAL P.03

(Attachment 3)

August 18, 2009

Fish and Game Commission
State of California
Via Facsimile: (916) 653-5040

Dear Sirs,

Re: San Francisco Bay Roe Herring - Notice of Proposed Changes in Regulation

I am writing to request that the Commission consider Option 2 for the 2009/10 San Francisco herring fishery. I operate an unloading facility at Fishermen's wharf and rely heavily on the herring landings for the winter months. The zero quota in Option 1 would mean a loss of much needed work for myself and my staff and other secondary businesses. } 1 } 2

I have been involved in the herring fishery for over 20 years. The herring fishery is certainly cyclical but a low biomass based on current assessment methods is certainly not cause for alarm nor drastic measures such as a zero quota. } 3

Please don' use a low biomass to justify a closure. A low biomass should result in a low quota based on a 10% harvest factor. The 10% harvest factor reflects fluctuating biomass proportionately and a 484 ton quota would remain in the realms of conservation while providing opportunity to those of us who rely on this fishery for our livelihood. Thank you. } 4 } 5

Yours truly,

Joe Garofalo